- #6

Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 65219-A/JPW/PJP	Serial No. 09/898,417
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant Michael R. Rosen et al.	
	Filing Date July 3, 2002	Group 1635

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

BL	1	DiFrancesco D: The cardiac hyperpolarizing-activated current, I_f: Origins and developments. *Prog. BiophysMol. Biol.* Vol. 46, No. 3, 1985, pages 163-183; (Exhibit 2)
	2	Zhou Z and Lipsius SL: Effect of isoprenaline on I_f current in latent pacemaker cells isolated from cat right atrium: ruptured vs. perforated patch whole-cell recording methods. *Pflugers Arch.* Vol. 423, No.5 Pt. 6, June 1993, pages 442-447; (Exhibit 3)
BL	3	Thuringer D, et al.: A hyperpolarization-activated inward current in human myocardial cells. *JmolCell. Cardiol.* Vol. 24, No. 5, May 1992, pages 451-455; (Exhibit 4)

EXAMINER Brian Hess	DATE CONSIDERED 1/14/03

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Appl. : Michael R. Rosen et al.
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	10	Cerbai E, et al.: Influence of postnatal-development on I_f occurrence and properties in neonatal rat ventricular myocytes. *Cardiovasc. Res*. Vol. 42, No. 2, May 1999, pages 416-423; (Exhibit 9)
	11	Cerbai E, et al.: Characterization of the hyperpolarization-activated current, I_f, in ventricular myocytes isolated from hypertensive rats. *J. Physiol*. Vol. 481, No. 3, Dec 15, 1994, pages 585-591; (Exhibit 10)
	12	Cerbai E, et al.: Characterization of the hyperpolarization-activated current, I_f, in ventricular myocytes from human failing heart. *Circulation*. Vol. 95, No. 3, February 4, 1997, pages 568-571; (Exhibit 11)
	13	Santoro B, et al.: Interactive cloning with the SH3 domain of N-src identifies a new brain specific ion channel protein, with homology to Eag and cyclic nucleaotide-gated channels. *Proc. Natl. Sci. USA*. Vol. 94, No. 26, December 23, 1997, pages 14815-14820; (Exhibit 12)
BN	14	Ludwig A, et al.: A family of hyperpolarization-activated mammalian cation channels. *Nature*. Vol. 393, No. 6685, June 11, 1998, pages 587-591; (Exhibit 13)

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Brad Hu 1/14/10

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PL	15	Santoro B, et al.: Identification of a gene encoding a hyperpolarization-activated pacemaker channel of brain. *Cell*. Vol. 93, No. 5, May 29, 1998, pages 717-729; (Exhibit 14)
	16	Shi W, et al.: Distribution and Prevalence of hyperpolarization-activated cation channel (HCN) mRNA Expression in Cardiac Tissues. *Circ. Res*. Vol. 85, No. 1, July 9, 1999, pages e1-e6; (Exhibit 15)
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	18	Ludwig A, et al.: Two pacemaker channels from human heart with profoundly different activation kinetics. *EMBO J*. Vol. 18, No. 9, May 4, 1999, pages 2323-2329; (Exhibit 17)
	19	Moosmang S, et al.: Cellular expression and functional characterization of four hyperpolarization-activated pacemaker channels in cardiac and neuronal tissues. *Eur. J. Biochem*. Vol. 268, No. 6, March 2001, pages 1646-1652; (Exhibit 18)
	20	Altomare C, et al.: Allosteric voltage-dependent gating of HCN channels. *Biophys. J*. Vol. 80, 2001, pages 241a.
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DL	25	He TC, et al.: A simplified system for generating recombinant adenoviruses. *Proc. Natl. Acad. Sci. USA*. Vol. 95, No. 5, March 3, 1998, pages 2509-2514; (Exhibit 22)

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	27	Accili EA, et al.: Properties and modulation of I_f in newborn versus adult cardiac SA node. *Am. J. Physiol.* Vol. 272, 1991, pages H1549-H1552.
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	29	Cui J, et al.: Gating of IsK expressed in Xenopus oocytes depends on the amount of mRNA injected. *Gen. Physiol.* Vol. 104, No. 1, July 1994, pages 87-105; (Exhibit 25)
	30	Guillemare E, et al.: Effects of the level of mRNA expression on biophysical properties, sensitivity to neurotoxins, and regulation of the brain delayed-rectifier K+ channels Kv1.2. *Biochemistry.* Vol. 31, No. 49, December 15, 1992, pages 12463-12468; (Exhibit 26)
	31	Honore E, et al.: Different types of K+ channel current are generated by different levels of a single mRNA. *EMBO J.* Vol. 11, No. 7, July 1992, pages 2465-2471; (Exhibit 27)
	32	Honore E, et al.: Different types of K+ channel current are generated by different levels of a single mRNA. *EMBO J.* Vol. 11, No. 7, July 1992, pages 2465-2471; (Exhibit 27)
	33	DiFrancesco D, et al.: Direct activation of cardiac pacemaker channels by intracellular cyclic AMP. *Nature.* Vol. 351, No. 6322, May 9, 1991, pages 145-147; (Exhibit 29)
	34	Kaupp UB, et al.: Molecular diversity of pacemaker ion channels. *Annu, Rev. Physiol.* Vol. 63, 2001, pages 235-257; (Exhibit 30)
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DV	36	Yu H, et al.: Phosphatase inhibition by calyculin A increases I_f in canine Purkinje fibers and myocytes. *Pflugers Arch.* Vol. 422, No. 6, March 1993, pages 614-616; (Exhibit 32)

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	40	Santoro B, et al.: Molecular and functional heterogeneity of hyperpolarization-activated pacemaker channels in the mouse CNS. *Jneurosci.* Vol. 20, No. 14, July 15, 2000, pages 5264-5275; (Exhibit 35)
	41	Shi W, et al.: The distribution and prevalence of HCN isoforms in the canine heart and their relation to the voltage dependence of I_f. *Biophys. J.* Vol. 78, 2000, pages 353A.
	42	Melman YF, et al.: Structural determinants of KvLQT1 control by the KCNE family of proteins. *J Biol Chem.* Vol. 276, No. 9, March 2, 2001, pages 6439-6444; (Exhibit 36)
	43	Tinel N, et al.: KCNE2 confers background current characteristics to the cardiac KCNQ1 potassium channel. *EMBO J.* Vol. 19, No. 23, December 1, 2000, pages 6326-6330; (Exhibit 37)
	44	Martens JR, et al.: Differential targeting of Shaker-like potassium channels to lipid rafts. *BiolChem.* Vol. 275, No. 11, March 17, 2000, pages 7443-7446; (Exhibit 38)
RL	45	Chauhan VS, et al.: Abnormal cardiac Na(+) channel properties and QT heart rate adaptation in neonatal ankyrin(B) knockout mice. *Circ. Res.* Vol. 86, No. 4, March 3, 2000, pages 441-447; (Exhibit 39)
Duplicate	46	Chauhan VS, et al.: Abnormal cardiac Na(+) channel properties and QT heart rate adaptation in neonatal ankyrin(B) knockout mice. *Circ. Res.* Vol. 86, No. 4, March 3, 2000, pages 441-447; (Exhibit 39)

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	48	Barbuti A, et al.: Action of internal pronase on the f-channel kinetics in the rabbit SA node. *J. Physiol.* Vol. 520, No. 3, November 1, 1999, pages 737-744; (Exhibit 42)
	49	Wainger BJ, et al.: Domains involved in cyclic nucleotide modulation of hyperpolarization-activated HCN channels. *Nature*. In Press, 2001.
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	55	Hansen JE, et al.: Prediction of O-glycosylation of mammalian proteins:Specificity patterns of UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase. *Biochem. J.* Vol. 308, No. 3, June 15, 1995, pages 801-813; (Exhibit 48)
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Brian A. Holmes	11/4/03

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